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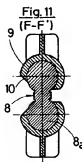
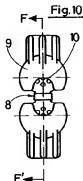
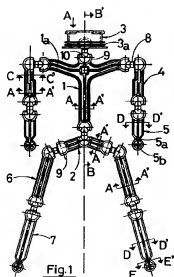
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⑨ **Articulated structure for dolls or puppet bodies.**

⑩ The articulated structure for dolls or puppet bodies of the invention consists of a structure or skeleton-like framework in which the various elements and members which comprise it are connected with one another at their ends by means of link connections (8,9) which in combination with the structure of the referenced ends constitute ball and socket articulations. The link connections are formed by two spheres 8a connected by a radial appendix 8b, over

which is injected the integrating material making up the semispherical catches 9, constructed in the ends of the elements or members of the skeleton-like framework.

The improvements are applicable in the manufacture of articulated structures for dolls which permit stable and voluntary positioning of their members or connecting parts.



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FIELD OF THE INVENTION

The present Patent of Invention refers to improvements in the form of articulated structures for dolls or puppet bodies [TN: henceforth, "doll", which can also be the body of a puppet], which, in the function for which they are intended, contribute various advantages which furnish a notable advancement over presently employed articulated structures to the organization and construction of the articulated structures.

PRIOR TO THE INVENTION

It is already known in the doll market that articulation means are incorporated which allow for the movement of the doll members in order to adopt various postures which add greater realism to the doll and which at the same time extend the realms of possible games to be played beyond those with nonarticulated structure. Without exception, in the present state of technology there have been no steps forward and the articulation means continue to suffer from the defect of their principal drawback which is their low resistance, due to which the very weight of the member or any slight pressure thereon is capable of altering the established position of the member. Thus the postures of the doll are not maintained in a fixed position for a long time, which would be an attractive feature in the toy.

SUMMARY OF THE INVENTION

By virtue of its experience in the manufacture of toys, and more particularly the manufacture of dolls in its broader sense, such as those which adopt human, animal or any other type of form, the company petitions that it has conceived improvements which can be applied to the articulated structure of dolls of the type described above, by virtue of which arbitrary and multiple positions and postures can be assigned to dolls, and can be held stable for an indefinite length of time, while not constituting any obstacle to the manipulation of the doll by the child who is voluntarily making new changes of position.

The improvements according to the present Patent of Invention offer the advantages which have been described above, in addition to others which are to be easily deduced from the representational embodiment of an articulated structure incorporating said improvements for dolls, which are described in greater detail hereinafter to facilitate comprehension of the features explicated in the preceding, and drawings are provided to show the various details and, accompanying the present account, taken solely as a nonlimiting example of the

scope of the present invention, one practical embodiment of the object of the same is represented.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings :

Figure 1 corresponds to a plan view of the structure.

Figure 2 is a detail of the top part of the structure, seen along "A".

Figures 3, 4, 5, 6 and 7 show respectively sections of the structure seen along A-A', B-B', C-C', D-D' and E-E'.

Figures 8 and 9 represent two link connections of the components of the structure.

Figures 10 and 11 represent an articulation in greater detail, shown from the outside and sectioned through a diametral plane (through the center of the sphere) F-F'.

Figures 12 and 13 show respectively a basic part provided to obtain the link connection and the link connection obtained from said part by careful injection of a new application of material, all with the objective of attaining improved sphericity.

DESCRIPTION OF ONE EMBODIMENT OF THE INVENTION

In the embodiment shown in the drawings, the articulated structure for dolls, furnished with the improvements of the invention and in accordance with one realization of the same, comprises a structure or skeleton-like framework constituted of the aforementioned structural elements, designated 1, 2 and 3, which correspond to the trunk, hips and neck or collar of a person; and members 4 and 5, and 6 and 7, making up the top and bottom extremities; and the link connections 8, which connect the aforementioned members with the principal elements 1, 2 and 3, and connect said principal elements among themselves.

Element 1 is constituted of a part manufactured of injected material which adopts a "T" configuration, shown in cross section in Fig. 3, shaped by ribs 11 which intersect orthogonally. The arms 1a of said part are essentially oblique, and the ends are finished by semispherical hollow forms, designated as 9, with recesses 10.

Element 2 is configured of a part comprising an obtuse angle of cross section identical to that of part 1, provided with semispheres 9 arranged in its ends and its apex.

Element 3, connected to element 1, is configured of a revolving cylindrical part, hollow and open at the top, with annular ribs 3a, and with a semisphere 9 at its bottom, with its opening to the exterior.

Member 4, forming both of the top extremities, presents a section A-A', shown in Fig. 4, formed by ribs 12 which intersect orthogonally. Likewise, member 5, another component of said top extremities, presents a section D-D', shown in Fig. 6, formed by intersecting ribs 13, one of them straight and the other in a double "T" shape, and shows a reduced cross section 5a, joining with an end 5b.

Member 4 presents semispheres 9 in its ends, with its opening at a 90 degree angle [TN: "top" or "one" opening probably intended], while member 5 presents a semisphere of larger cross section at its end, with its opening aligned transversally.

Member 5 presents a section A-A', as shown in Fig. 3, and two semispherical ends of the same type as 9, with its opening arranged transversally and obliquely with respect to the longitudinal axis of said member.

Member 7 presents a section D-D', as shown in Fig. 6, and a section E-E', as shown in Fig. 7, formed by intersecting ribs 14 which join with an end 7a [TN: not enumerated in drawings].

The link connections of the components described are configured by the parts 8 which comprise two spherical bodies 8a connected by a diametral appendix 8b. The surfaces of the spherical bodies can be smooth or else can include flat facets, curved concavely as in 8c, elongated fissures 8d, or some other type of protuberance or recess in order to offer resistance to the friction with the surface of semispherical cavities 9, inside which they are to revolve, since this is the resistance which determines the fixation and immobility of the position adopted by the skeleton-like framework. The recesses 10 of these semispherical cavities coincide with the natural movement of the respective components, such as arms, legs, etc., in such a manner as to allow a greater inclination to swivel in this sense.

In some cases, a base part 15 is constructed beforehand to achieve improved sphericity in the link connections 8a, in the ends of which are constituted annular projections 15a. The material 16 is injected over said ends, and the material adopts a uniform spherical shape.

The structural components and members are joined with the link connections 8 during the actual manufacturing process, consisting of the injection of the material of the cited parts over the spheres 8a, in such a manner that they constitute an indivisible articulated whole.

The structural components and members, formed by longitudinal ribs which intersect orthogonally, present virtually circular cross sections, as can be appreciated in Figures 3 to 7.

Claims

- Improvements in the form of articulated structures for dolls, characterized essentially in that three principal parts, each one of which constitutes respectively a "T", as in part 1, an angle, part 2, and a revolving cylinder, part 3, are consigned to the "T"-shaped part, preferably taking a vertical longitudinal position in which the central section realizes the function of the upright of the skeleton-like framework, and the transverse sections the function of shoulders; in that the angular part 2 adopts a transverse position below the longitudinal section of the "T", to function as a hip; in that the cylindrical part 3 adopts a top and centered position relative to said "T", to function as the support of the head of the doll; and in that the aforementioned parts come together and are connected by means of link connections, which in combination with the structure of the parts constitute ball and socket articulations.
- Improvements in the form of articulated structures for dolls, as in Claim 1, characterized in that members 4, 5, 6 and 7, essentially rectilinear members, the first two of which, configuring the top extremities, are connected with one another by articulation by middle link connections, and are connected at the ends of the arms of the "T" by means of other link connections of the same type, while the other two members configure the bottom extremities, also connected with each other by means of link connections identical to the aforementioned ones, and connected in turn to the ends of the angular part 2.
- Improvements in the form of articulated structures for dolls, as in Claim 1, characterized in that the part 3 and the part 2 meet at and are connected to the "T"-shaped part, by means of suitable link connections at the mid-points of the same, situated in a top extension of the longitudinal section of the "T", corresponding to a connection existing in the base of the cylindrical body 3, and in the opposite end of the longitudinal section of the aforementioned "T", in correspondence with another connection existing in the apex of the part 2.
- Improvements in the form of articulated structures for dolls, as in Claims 1 to 3, characterized in that the connections which constitute the ball and socket articulations are configured of two spheres 8a connected together by a diametral appendix 8b in combination with semispherical cavities 9 which exist in the

component parts of the skeleton-like framework of the doll, in which cavities they are lodged and revolve.

5. Improvements in the form of articulated structures for dolls, as in Claim 4, characterized in that the spheres present a plurality of facets or planar zones 8c, or hollowed out areas 8d or any other type of protuberance or hollow in their surface in order to offer resistance in contact with the interior surface of the semi-spheres 9 in which they are lodged, sufficient to determine the fixation and immovability of the position adopted by the skeleton-like framework. 5 10 15
6. Improvements in the form of articulated structures for dolls, as in Claims 4 and 5, characterized in that the semispheres 9 which form the connecting part of the articulated connections present semicircular recesses 10 which serve for the lodging of the section of the diametral appendix 8b, to facilitate the natural movement of the members or components of the framework. 20 25
7. Improvements in the form of articulated structures for dolls, as in Claims 4 to 6, characterized in that the articulated connections are constituted by the injection of the material which comprises the separate structural elements over the spheres which constitute the link connections, forming an indivisible whole. 30
8. Improvements in the form of articulated structures for dolls, as in Claims 4, 5, 6 and 7, characterized in that in one alternative embodiment, the link connections or attachments are constituted of a base part, obtained in a prior phase, further shaped by an appendix 15 with greatly thickened [TN: reguesados. ENg-ruesados was intended.] ends, in which annular projections 15a stand out, over which, in a second phase, is injected a material 16 which adopts the uniform spherical shape. 35 40 45

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Fig. 3
(A-A')

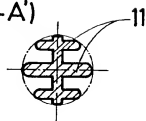


Fig. 5
(C-C')

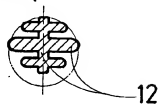


Fig. 6
(D-D')

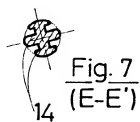
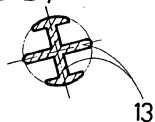


Fig. 4
(B-B')

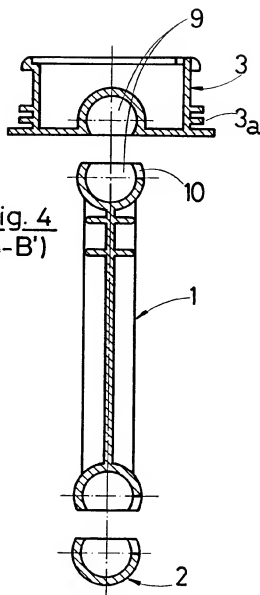


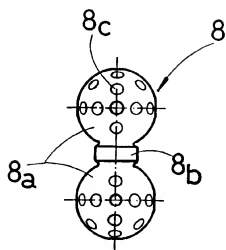
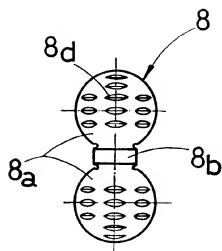
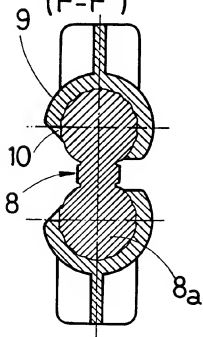
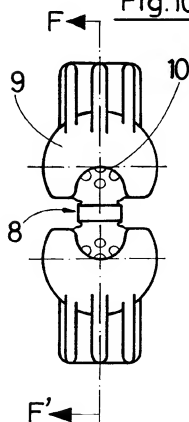
Fig. 8Fig. 9Fig. 11
(F-F')Fig. 10

Fig. 12

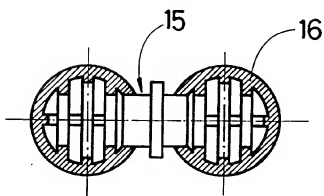
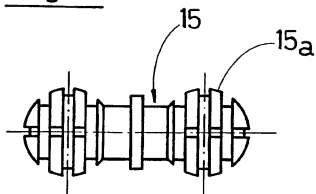


Fig. 13

DOCUMENTS CONSIDERED TO BE RELEVANT

DOCUMENTS CONSIDERED TO BE RELEVANT			Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Category	Citation of document with indication, where appropriate, of relevant passages.			
X	US-A-2 129 421 (HALES)		1-3	A63H3/46
Y	* claim 1; figures 1,7,9 *		4-6	
Y	FR-A-1 386 510 (RIBOUD) * figures 1-7 *		4-6	
Y	DE-A-174 835 (ECKERT) * page 1, line 11 - line 16; figures 3,5 *		5,6	
A	US-A-3 955 312 (PUGH) * column 3, line 5 - line 6; figure 2 *		7	
A	FR-A-596 011 (PETITCOLLIN) * page 2, line 76 - line 91; figures 6,7 *		5	
				TECHNICAL FIELD SEARCHED (Int. Cl.5)
				A63H
The present search report has been drawn up for all claims				
Place of search THE HAGUE		Date of completion of the search 03 NOVEMBER 1993	Examiner PAPA E.	
CATEGORY OF CITED DOCUMENTS				
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons : member of the same patent family, corresponding document				